WORK AND SAFETY PLAN

2013 Kudzu Management Project for Indiana

1.0 Treatment Area

The Indiana Department of Natural Resources (IDNR), Division of Entomology and Plant Pathology proposes a project to treat kudzu populations in late summer or autumn of 2013. The proposed action includes 51 sites in 20 counties in Indiana which totals an estimated 59.82 acres (Table 1 below and maps in Appendix B).

Table 1. Number of Treatment Sites and Acres by County for 2013.

COUNTY	TREATMENT SITES	TREATMENT ACRES
Clark	6	2.85
Crawford	3	1.23
Clay	2	7.56
Dubois	6	4.22
Floyd	1	1.02
Gibson	2	2.10
Greene	2	1.33
Harrison	2	2.71
Jennings	8	6.20
Johnson	1	0.64
Lawrence	4	1.52
Martin	4	2.71
Morgan	1	1.45
Orange	1	1.55
Posey	1	0.65
Sullivan	2	5.89
Vanderburgh	1	3.00
Vigo	1	1.00
Warrick	2	9.59
Washington	1	2.60
Total Proposed Project	51	59.82

2.0 Description of the Proposed Treatment Sites

(See Table 2. Definitions for Descriptions of Proposed Treatment Sites).

Description of the Proposed Treatment Sites

Clark-2: The proposed treatment site contains 0.14 acres. The site is composed of Sugar Maple, Ash, Virginia Pine, Oak, American Sycamore and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. Cattle graze close to the site. The site is small and located on top of a hill with a limited flow of water running into the site. A creek occurs 0.25 miles southwest of the site. The soil types at the site are Ryker-Grayford Silt Loam (RztC2) (6-12% slopes, eroded), Haggatt-Caneyville Silt Loam (HtwD2) (12-25% slopes, eroded) and Haggatt-Caneyville Complex (HtzD3) (12-25% slopes, severely eroded). The Ryker-Grayford series of soils consists of deep, well drained soils. Permeability is moderate and the potential for surface water runoff is low to high. The Haggatt-Caneyville series of soils consists of moderately deep to deep, well drained soils. Permeability is moderately slow to slow and the potential for surface water runoff is medium to very high. No houses occur on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Clark-3: The proposed treatment site contains 0.64 acres. The site is composed of Maple, Walnut, Pine, Yellow Poplar, American Elm and other species of trees, shrubs and plants. No legumes occur within the site. The vascular plant *Lechea racemulosa* (Illinois Pinweed) (Family: Cistaceae) is an Indiana State Endangered plant species that has been previously identified by DNR staff at the site. The site is located along a stream bank, and has a risk of flooding. The soil types at the site are Beanblossum Silt Loam (BcrAW) (1-3% slopes, occasionally flooded, very brief duration) and Gilwood-Brownstown Silt Loam (GgbG) (25-75% slopes). Beanblossum Silt Loam and Gilwood-Brownstown Silt Loam series of soils consist of deep, well drained soils. The potential for surface water runoff in Beanblossum Silt Loam is very low to low and medium to high in Gilwood-Brownstown Silt Loam. Permeability is moderate to rapid in both. No houses occur on the site. The site has had no prior treatment. This site has a low density population and Glyphosate is proposed for 2013. Glyphosate will be applied as a foliar treatment. Thus, there is a low risk of erosion potential at the site.

Clark-4: The proposed treatment site contains 1.36 acres. The site is composed of Flowering Dogwood, American Beech, Ash, Oak, Black Cherry and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at the site are Knobcreek-Navilleton-Haggett Silt Loam (KxoC2) (karst, rolling, eroded) and Crider-Bedford-Navilleton Silt Loam (CtwB) (2-6% slopes). The Knobcreek-Navilleton-Haggett series of soils consists of deep, well drained soils. Permeability is slow to moderate and the potential for

surface water runoff is high. Crider-Bedford-Navilleton series of soils consists of generally very deep, moderately well to well drained soils. Permeability is generally moderate above the fragipan and slow in the fragipan. The potential for surface water runoff is medium. A soil erosion plan is developed for this site to manage any soil erosion which may occur after kudzu is removed. The erosion plan consists of seeding with 84 lbs./acre of cereal rye after treatment and frost seeding with 35 lbs./acre of fescue. No houses occur on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a high risk of erosion potential at the site.

Clark-5: The proposed treatment site contains 0.32 acres. The site is composed of Silver Maple, Honeysuckle, Multiflora Rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Urban land-Udarents (UnpA) (loamy substratum, complex terrace, 0-3% slopes). The drainage, permeability and potential for surface water runoff can vary greatly on Urban land Udarent soil sites because the natural soils have been disturbed. Soil drainage at this site is likely moderately well drained. Permeability is unknown and the potential for surface water runoff is likely low. No houses occur on the site, but a mobile home park is immediately north of the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Clark-6: The proposed treatment site contains 0.02 acres. The site is composed of American Sycamore, American Sweetgum, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Urban land-Udarents (UngB) (fragipan substratum, complex, till plain, 0-12% slopes). The drainage, permeability and potential for surface water runoff can vary greatly on Urban land Udarent soil sites because the natural soils have been disturbed. Soil drainage at this site is likely moderately well drained. Permeability is unknown and the potential for surface water runoff is likely low. No houses occur on the site, but a golf course is adjacent to the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Clark-7: The proposed treatment site contains 0.37 acres. The site is composed of Sugar Maple, Black Walnut, American Elm, Virginia Pine and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at the site are Trappist Silty Clay Loam (ThbD5) (6-18% slopes, gullied) and Deputy-Trappist Silt Loam (DtvC2) (6-12% slopes, eroded). The Trappist and Deputy-Trappist series of soils consist of moderately well drained to well drained soils. Permeability is slow to moderate and the potential for surface water runoff is high. There is native vegetation growing near the kudzu site, limited slope and limited water flow running through the site. No houses occur on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Crawford-4: The proposed treatment site contains 0.17 acres. The site is composed of Red Maple, White Ash, Black Cherry and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. 2013 Early Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the state threatened plant *Bacopa rotundifolia* (roundleaf water-hyssop) (Family: Scrophulariaceae) within a half mile of the site. A drainage ditch occurs within the site. The soil type at the site is Apalona Silt Loam (AgrC2) (6-12% slopes, eroded). The Apalona series of soils consists of very deep, moderately well drained soils. Permeability is moderate above the fragipan and very slow in the fragipan and below. The potential for surface water runoff is medium to very high. No houses occur on the site. The site was treated in 2011 with Clopyralid and with Clopyralid and Glyphosate in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site.

Crawford-5: The proposed treatment site contains 0.83 acres. The site is composed of Red Maple, White Ash, Virginia Pine, American Sycamore and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Udorthents Soils (UbxD) (6-18% slopes, gullied). The Udorthent series of soils consists of moderately well drained to well drained soils. Permeability varies from very low to high. The potential for surface water runoff is medium to very high. No houses occur on the site. The site was treated in 2012 with Clopyralid and Glyphosate. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large

vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Crawford-6: The proposed treatment site contains 0.23 acres. The site is composed of White Ash, Eastern Red Cedar, Yellow Foxtail, Canada goldenrod and grasses. Legumes occur within the site. No threatened or endangered species are known to occur within the site. The site mostly lies on top of a sloped area, with surface water near to the site. The soil type at the site is Pits, Quarry (Pml). The drainage, permeability and potential for surface water runoff can vary greatly on Pits, Quarry soil sites because the natural soils have been highly disturbed. The potential for surface water runoff is likely moderate at this site. Permeability and drainage are unknown. No houses occur on the site. The site has had no prior treatment. The site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Clay-5: The proposed treatment site contains 7.00 acres. The site is composed of Maple, American Beech, Tulip Poplar, Pitch Pine, American Sycamore, Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. Ponds occur within the site. The soil type at this site is Fairpoint Shaly Silty Clay Loam (FcG) (33-90% slopes). The Fairpoint series of soils consists of well drained soils. Permeability is very low to moderately high. The potential for surface water runoff is very high. The site has wide varying and steep slopes. No erosion plans are needed at this site because it has been treated in stages with selective herbicides that preserved native vegetation. No houses occur on the site. This site was treated with Clopyralid in 2008 and 2009 and treated with Clopyralid and Glyphosate in 2010 to 2012. This site has a medium density population and Clopyralid, Glyphosate and Metsulfuron are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment Thus, there is a severe risk of erosion potential at the site however the staged treatments have managed erosion risk.

Clay-6: The proposed treatment site contains 0.56 acres. The site is composed of White Ash, Eastern Red Cedar, Eastern Cottonwood, American Sycamore, Multiflora Rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A ditch which could contain periodic water runs through the center of the site. The soil types at this site are Fairpoint Shaly Silt Loam (FcB) (0-8% slopes), Hickory Loam (HcF) (30-70% slopes) and Muren Silt Loam (MuB2) (2-6% slopes, eroded). These soil series types consist of well drained soils. The Muren Silt Loam and Hickory Loam soil series have moderate permeability, and the Fairpoint Shaly Silt Loam has very low to moderately high permeability. The potential for surface water runoff is high to very high in these soils. No houses occur on the site. The site was treated with Clopyralid in 2009 to

2011. The site has a medium density population and Glyphosate and Metsulfuron are proposed for 2013. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a moderate risk of erosion potential at the site.

Dubois-1: The proposed treatment site contains 1.20 acres. The site is composed of Flowering Dogwood, Virginia Pine, Oak, American Elm and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A dry stream occurs within the site. The soil type at this site is Fairpoint Shaly Silt Loam (FcB) (0-8 % slopes). The Fairpoint Shaly Silt Loam series of soils consist of well drained soils. Permeability is very low to moderately high. The potential for surface water runoff is very high. No houses occur on the site. The site was treated with Clopyralid in 2009, and treated with Clopyralid and Glyphosate in 2010 to 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site.

Dubois-2: The proposed treatment site contains 2.41 acres. The site is composed of Flowering Dogwood, Black Walnut, White Oak, American Elm, Shagbark Hickory and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A dry stream occurs within the site. The soil type at this site is Fairpoint Shaly Silt Loam (FcB) (0-8% slopes). The Fairpoint Shaly Silt Loam series of soils consist of well drained soils. Permeability is very low to moderately high. The potential for surface water runoff is very high. No houses occur on the site. The site was treated with Clopyralid in 2009, and treated with Clopyralid and Glyphosate in 2010 to2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used.

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Dubois-3: The proposed treatment site contains 0.05 acres. The site is composed of Red Maple, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Gilpin-Berks Complex (GoF) (20-50% slopes). Gilpin-Berks Complex series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. No houses occur on the site. The site was treated with Clopyralid in 2011 and Clopyralid and Glyphosate in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective

manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is low risk of erosion potential at the site.

Dubois-4: The proposed treatment site contains 0.43 acres. The site is composed of White Ash, Red Oak, Shortleaf Pine, Virginia Pine, Shagbark Hickory, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. An erosion ditch which may contain periodic water occurs within the site. The soil type at this site is Gilpin-Berks Complex (GoF) (20-50% slopes). Gilpin-Berks Complex series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. Native vegetation exists at the site and can be preserved with the use of selective herbicides and selective application of herbicides. No houses occur on the site. The site was treated with Clopyralid in 2011 and Clopyralid and Glyphosate in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Dubois-5: The proposed treatment site contains 0.10 acres. The site is composed of Red Maple, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Gilpin-Berks Complex (GoF) (20-50% slopes) and Gilpin Silt Loam (GID3) (12-18% slopes, severely eroded). The Gilpin-Berks Complex and Gilpin Silt Loam series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. No houses occur on the site. The site has had no prior treatment. The site has a high density population and Clopyralid is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Thus, there is a low risk of erosion potential at the site.

Dubois-6: The proposed treatment site contains 0.03 acres. The site is composed of White Ash, Red Oak, Shortleaf Pine, Virginia Pine, Shagbark Hickory, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. An erosion ditch which may contain periodic water occurs within the site. The soil types at this site are Gilpin-Berks Complex (GoF) (20-50% slopes) and Gilpin Silt Loam (GID3) (12-18% slopes, severly eroded). The Gilpin-Berks Complex and Gilpin Silt Loam series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. No houses occur on the site. The site has had no prior treatment. The site has a high density population and Clopyralid is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Thus, there is a low risk of erosion potential at the site.

Floyd-4: The proposed treatment site contains 1.02 acres. The site is composed of Tulip Poplar, Red Oak, Flowering Dogwood, Eastern Redbud, Black Locust, Multiflora Rose and other species of trees, shrubs and plants. Legumes occur within the site. The site occurs on a DNR Nature Preserve property. No threatened or endangered species are known to occur within the site. A small pond exists on the north side of the site and a creek runs along the west side of the site. The soil type at this site is Gnawbone-Kurtz Silt Loam (GmaG) (20-60% slopes). The Gnawbone-Kurtz series of soils consists of well drained soils. Permeability is moderate. The potential for surface water runoff is medium to high. No houses occur on the site. The site has had no prior treatment. The site has a high density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Gibson-1: The proposed treatment site contains 1.66 acres. The site is composed of Ash, Black Walnut, Black Cherry, Honeysuckle, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. This site occurs adjacent to soybean fields. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Alford Silt Loam (AlC3) (6-12% slopes, severely eroded), Sylvan Silt Loam (SyC3) (6-12% slopes, severely eroded) and Alford Silt Loam (AlB2) (2-6% slopes, eroded). The Alford Silt Loam and Sylvan Silt Loam series of soils consist of well drained soils. Permeability is moderate. The potential for surface water runoff is low to very high in Alford series soils and medium to high in Sylvan series soils. There is a limited flow of water into and through the site and selective herbicides will preserve the native vegetation. No houses occur on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Gibson-3: The proposed treatment site contains 0.44 acres. The site is composed of Sugar Maple, Black Walnut, American Elm, Locust species and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Alford Silt Loam (AlB2) (2-6% slopes, eroded). The Alford Silt Loam series of soils consist of well drained soils. Permeability is moderate. The potential for surface water runoff is low to very high. A soil erosion plan is developed for this site to manage any soil erosion which may occur after kudzu is removed. The erosion plan consists of seeding with 84 lbs./acre of cereal rye after treatment and frost seeding with 35 lbs./acre of fescue. A house occurs on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will

also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a high risk of erosion potential at the site.

Greene-1: The proposed treatment site contains 0.14 acres. The site is along a road right of way and there are no trees or shrubs present. No threatened or endangered species are known to occur within the site. No legumes occur within the site. No water sources occur within the site. The soil type at this site is Ava Silt Loam (AvB2) (2-6% slopes, eroded). The Ava Silt Loam series of soils consist of moderately well drained soils. Permeability is moderate in the upper part of the solum and very slow in the fragipan. The potential for surface water runoff is high. No houses occur on the site. The site was treated in 2009 and 2010 with Clopyralid. This site has a high density population and Metsulfuron is proposed for 2013. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Greene-4: The proposed treatment site contains 1.19 acres. The site is composed of Tulip Poplar, American Elm, Pine, Sugar Maple, Flowering Dogwood and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. The soil types at the site are Ava Silt Loam (AvB2) (2-6% slopes, eroded), Fairpoint Very Parachannery Loam (FcG) (35-90% slopes) and Hickory Silt Loam (HeE) (18-25% slopes). Permeability is moderate in these soil series. The Hickory Silt Loam and Fairpoint Very Parachannery Loam series consist of well drained soils. The Ava Silt Loam series of soil consists of moderately well drained soils. The potential for surface water runoff in Ava Silt Loam and Fairpoint Very Parachannery Loam is high to very high, and medium to very high in Hickory Silt Loam. No houses occur on the site. The site was treated in 2007 to 2010 with Clopyralid and with Clopyralid and Glyphosate in 2011. This site has a medium density population and Glyphosate and Metsulfuron are proposed for 2013. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Harrison-6: The proposed treatment site contains 2.69 acres. The site is composed of Maple, Flowering Dogwood, Oak, Black Cherry, Sassafras and other species of trees, shrubs and plants. No legumes occur within the site, but this site occurs adjacent to soybean fields. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Vertrees Crider Caneyville Complex (VcaC3) (karst, rolling, severely eroded), Vertrees Haggatt Caneyville Complex (VccD3) (karst, hilly, severely eroded) and Vertrees Crider Caneyville Silt Loam (VcbD2) (karst, hilly, eroded). These soil series consist of well drained soils. The potential for surface water runoff of these soils varies from low to high. Permeability is moderately slow to moderate. No houses occur on the site, but a house occurs approximately a fourth mile from the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for

future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Harrison-12: The proposed treatment site contains 0.02 acres. The site is composed of grasses and Engelmann's Adder's-tongue plant is present. No legumes occur within the site. No trees occur on the site. No threatened or endangered species are known to occur within the site. No water occurs on the site. The soil types at this site are Caneyville-Haggatt-Knobcreek Silt Loam (CbrD2) (karst, hilly, eroded) and Deuchars-Apalona-Wellston Silt Loam (DeaC2) (6-12% slopes, eroded). These soils consist of moderately well drained to well drained. The potential for surface water runoff on these soils is medium to very high. Permeability is moderate to moderately slow. No houses occur on the site. The site has had no prior treatment. The site has a high density population and Clopyralid is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Thus, there is a low risk of erosion potential at the site.

Jennings-1: The proposed treatment site contains 1.01 acres. The site is composed of Sassafras, Red Maple, White Ash, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. A drainage system and culverts occur adjacent to the site. The soil type at this site is Cobbsfork Silt Loam (ClfA) (0-1% slopes). The Cobbsfork Silt Loam series of soils consists of poorly drained soils. Permeability is moderate or moderately slow above the horizon with fragic soil properties and is slow or very slow in and below the horizon with fragic soil properties. The potential for surface water runoff is low to negligible. The site occurs on CSX Railroad land. No houses occur on the site. The site was treated with Clopyralid in 2009 to 2010, and was treated with Clopyralid and Glyphosate in 2011 and with Clopyralid in 2012. This site has a medium density population and Clopyralid, Glyphosate and Metsulfuron are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Jennings-2: The proposed treatment site contains 0.50 acres. The site is composed of Red Maple, Eastern Red Cedar, American Elm, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered are known to occur within the site. A drainage system and culverts occur adjacent to the site. The soil type at this site is Cobbsfork Silt Loam (ClfA)(0-1% slopes). The Cobbsfork Silt Loam series of soils consists of poorly drained soils. Permeability is moderate or moderately slow above the horizon with fragic soil properties and is slow or very slow in and below the horizon with fragic soil properties. The potential for surface water runoff is low to negligible. The site occurs on CSX Railroad land. No houses occur on the site. The site was treated with Clopyralid in 2009 to 2010, and was treated with Clopyralid and Glyphosate in 2011 and with Clopyralid in 2012. This site has a medium density population and Clopyralid, Glyphosate and Metsulfuron are proposed for 2013.

Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Jennings-5: The proposed treatment site contains 0.65 acres. The site is composed of Maple, Ash, Tulip Poplar, Red Oak, Sassafras, Multiflora Rose and other species of trees, shrubs and plants. No legumes occur within the site. No water occurs on the site. No threatened or endangered species are known to occur within the site. The soil types at this site are Bonnell-Blocher-Hickory Silt Loam (BlkE2) (12-25% slopes, eroded) and Nabb Silt Loam (NaaB2) (2-6% slopes, eroded). These soil series consist of moderately well drained to well drained soils. The potential for surface water runoff is medium to very high. Permeability is moderate to slow. No houses occur on the site. The site was treated in 2008 to 2010 with Clopyralid and treated with Glyphosate and Metsulfuron in 2011. This site has a low density population and Metsulfuron is proposed for 2013. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

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Jennings-6: The proposed treatment site contains 1.57 acres. The site is composed of Maple, Flowering Dogwood, White Pine, Oak, American Elm and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. A creek occurs 0.75 miles from the site. The soil types at this site are Blocher Cincinnati Silt Loam (BlgC3) (6-12% slopes, severely eroded), Bonnell Hickory Blocher Complex (BnuD3) (12-25% slopes, severely eroded) and Bonnell Blocher Hickory Silt Loam (BlkE2) (12-25% slopes, eroded). These series of soils consist of moderately well drained to well drained soils. The potential for surface water runoff is low to very high. Permeability is moderately slow to moderate. No houses occur on the site. This site has very difficult access. The site was treated with Clopyralid in 2009 and 2010 and with Clopyralid in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used.

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Jennings-9: The proposed treatment site contains 1.85 acres. The site is composed of Common persimmon, Maple, Ash, Black Walnut, Black Cherry, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. 2013 Early Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the state species of special concern the mussel *Villosa lienosa* (little spectaclecase) within a half mile of the site. A creek occurs immediately adjacent to the site. The soil type at this site is Pekin Silt Loam (PcrC2) (6-12% slopes, eroded). Pekin Silt Loam series of soils consist of moderately well drained. The

potential for surface water runoff is medium to very high. Permeability is moderate above the fragipan and slow or very slow in the fragipan. No houses occur on the site. The site was treated with Clopyralid and Glyphosate in 2010 and 2012, and was treated with Clopyralid in 2011. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Jennings-10: The proposed treatment site contains 0.19 acres. The site is composed of Black Cherry, Red Oak, American Sycamore, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. 2013 Early Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the state species of special concern the mussel *Villosa lienosa* (little spectaclecase) within a half mile of the site. A creek occurs immediately adjacent to the site. There is also a limited flow of water into the site and native vegetation under the kudzu. The soil type at this site is Haymond Silt Loam (HcgAW) (0-2% slopes, occasionally flooded, very brief duration). The Haymond Silt Loam series of soils consist of well drained soils. The potential for surface water runoff is negligible to low. Permeability is moderate. USDA, NRCS has been consulted regarding the erosion potential of this site and the site is being monitored. The site is being treated in stages in order to prevent soil erosion. No houses occur on the site. The site was treated with Clopyralid and Glyphosate in 2010 , treated with Clopyralid in 2011, and treated with Glyphosate in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a high risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used.

Jennings-11: The proposed treatment site contains 0.05 acres. The site is composed of Sugar Maple, Black Cherry, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. 2013 Early Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the state species of special concern the mussel *Villosa lienosa* (little spectaclecase) within a half mile of the site. No water sources occur within the site. The soil types at this site are Bartle Silt Loam (BbhA) (0-2% slopes) and Pekin Silt Loam (PcrB2) (2-6% slopes, eroded). The Bartle Silt Loam soils consist of somewhat poorly drained soils and Pekin Silt Loam soils consist of moderately well drained soils. The potential for surface water runoff in Bartle Silt Loam is low to medium, and medium to very high in Pekin Silt Loam soils. Permeability is moderate above the fragipan and slow or very slow in the fragipan. No houses occur on the site. The site was treated with Clopyralid and Glyphosate in 2011 and 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment

and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Jennings-12: The proposed treatment site contains 0.38 acres. The site is composed of Multiflora Rose, grasses, Yellow Foxtail, Honey Locust and other species of trees, shrubs and plants. Legumes occur within the site. 2013 Early Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the State Endangered Species *Tyto alba* (barn owl) within a half mile of the site. No water sources occur within the site. The soil type at this site is Bonnell Blocher Hickory Silt Loam (BlkE2) (12-25% slopes, eroded). Bonnell Blocher Hickory Silt Loam soils consist ofmoderately well drained to well drained soils. The potential for surface water runoff is medium to very high. Permeability is moderate to moderately slow. No houses occur on the site. The site was treated with Clopyralid in 2011 and 2012. This site has a high density population and Clopyralid is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Thus, there is a moderate risk of erosion potential at the site and the site will be monitored.

Johnson-1: The proposed treatment site contains 0.64 acres. The site is composed of Eastern Redbud, American Beech, Maples, grasses and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. The site is located between two lakes. The soil types at this site are Miami Silt Loam (MnB2) (2-6%, eroded) and Muskingum Silt Loam (MxG) (25-50% slopes). These series of soils consist of moderately well drained to well drained soils. The permeability in Miami Silt Loam is moderate in the upper part of the solum, moderately slow in the lower part of the solum, and slow or very slow in the underlying dense till. Permeability in Muskingum Silt Loam is moderate. The potential for surface water runoff in these soils is medium to high. No houses occur on the site. The site was treated with Clopyralid in 2008 and 2009 and treated with Glyphosate in 2010. This site has a low density population and Metsulfuron and Glyphosate are proposed for 2013. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Lawrence-3: The proposed treatment site contains 0.51 acres. The site is composed of Eastern Redbud, Tulip Poplar, Red Oak, Sassafras, Ferns and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Crider Silt Loam (CspC2) (6-12% slopes, eroded). Crider Silt Loam series of soils consist of well drained soils. The potential for surface water runoff is low to high. Permeability is moderate. No houses occur on the site. The site was treated with Clopyralid in 2006 to 2008 and with Clopyralid and Metsulfuron in 2011. This site has a low density population and Metsulfuron is proposed for 2013. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Lawrence-4: The proposed treatment site contains 0.36 acres. The site is composed of Eastern Redbud, Red Maple, White Ash, American Beech and other species of trees, shrubs and plants.

Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Adyeville-Tipsaw-Wellston Complex (AcIF) (18-50% slopes), Hosmer Silt Loam (HsaB2) (2-6% slopes, eroded) and Wellston Silt Loam (WozDJ) (10-18% slopes, gullied). These soils consist of well drained to somewhat excessively drained soils. The potential for surface water runoff is medium to high. Permeability is moderate. No houses occur on the site. The site was treated with Clopyralid in 2008 to 2010 and with Clopyralid and Glyphosate in 2011. This site has a low density population and Metsulfuron is proposed for 2013. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Lawrence-8: The proposed treatment site contains 0.33 acres. The site is composed of Flowering Dogwood, Red Oak, Tulip Poplar and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Crider Silt Loam (CspC2) (6-12% slopes, eroded) and Bedford Silt Loam (BdoB) (2-6% slopes). These series of soils consist of moderately well drained to well drained soils. The potential for surface water runoff is low to high. Permeability is moderate. A house is adjacent to the site. The site was treated with Clopyralid in 2010 and 2011 and with Clopyralid and Glyphosate in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Lawrence-11: The proposed treatment site contains 0.32 acres. The site is composed of Red Oak, White Ash, American Sycamore, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. The site occurs a few hundred feet away from the White River. The soil type at this site is Crider Silt Loam (CspD2) (12-18% slopes, eroded). Crider Silt Loam soils are well drained. The potential for surface water runoff is low to high. Permeability is moderate. No houses occur on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Martin-3: The proposed treatment site contains 1.61 acres. The site is composed of Oak, White Pine, Flowering Dogwood, Tulip Poplar, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Apalona Silt Loam (AgrB) (2-6% slopes), Ebal Wellston Silt Loam (EbdD2) (10-18% slopes, eroded) and Apalona Silt Loam (AgrC2) (6-12% slopes, eroded). These series of soils consist of moderately well drained to well drained. The potential for surface water runoff is medium to rapid.

Permeability is moderate. Soil erosion prevention work was implemented in 2008. The most significant risk of soil erosion occurs in the early spring after the first year of treatment. Additional erosion work was not necessary and native vegetation has returned to the site thus reducing the risk of erosion. No houses occur on the site. The site was treated with Clopyralid and Glyphosate in 2008, 2009, 2011 and 2012. The site was treated with Glyphosate in 2010. This site has a medium density population and Clopyralid,Glyphosate and Metsulfuron are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a moderate to high risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used.

Martin-4: The proposed treatment site contains 0.68 acres. The site is composed of Sugar Maple, American Beech, Red Oak, Flowering Dogwood and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Wellston-Tipsaw-Adyeville complex (WpfG) (18-70% slopes) and Wellston Silt Loam (WhfC2) (6-12% slopes, eroded). These series of soils consist of well drained to somewhat excessively drained soils. The potential for surface water runoff ranges from low to rapid. Permeability is moderate to moderately rapid. No houses occur on the site. The site is on U.S. Gypsum property. The site was treated with Clopyralid in 2010 and 2011 and with Clopyralid and Glyphosate in 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Martin-5: The proposed treatment site contains 0.28 acres. The site is composed of American Sycamore, American Sweetgum, Rubus species, Eastern Redbud, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Wellston-Tipsaw-Adyeville complex (WpfG) (18-70% slopes) and Gatchel Loam (GacAW) (1-3% slopes, occasionally flooded, very brief duration). These series of soils consist of well drained to somewhat excessively drained soils. The potential for surface water runoff ranges from low to rapid. Permeability is moderate to moderately rapid. No houses occur on the site. This site is on U.S. Gypsum property. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Martin-6: The proposed treatment site contains 0.14 acres. The site is composed of Eastern White Pine, Black Cherry, Flowering Dogwood and other species of shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Apalona Silt Loam (AgrB) (2-6% slopes). Apalona Silt Loam series of soils are moderately well drained. The potential for surface water runoff is medium to very high. Permeability is moderate above the fragipan and very slow in the fragipan and below. Houses occur on the site. The site has had no prior treatment. This site has a high density population and Clopyralid is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Thus, there is a low risk of erosion potential at the site.

Morgan-3: The proposed treatment site contains 1.45 acres. The site is composed of Shagbark Hickory, Red Oak, American Elm, American Beech, Black Locust and other species of trees. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Ava Silt Loam (AvB) (2-6% slopes) and Wellston Silt Loam (WfC) (6-12% slopes). These series of soils consist of moderately well drained to well drained. The potential for surface water runoff in the Ava series of soils is high and is medium to rapid in the Wellsto series of soils. Permeability is moderate in these soils. A soil erosion plan is developed for this site to manage any soil erosion which may occur after kudzu is removed. The erosion plan consists of seeding with 84 lbs/acre of cereal rye after treatment and frost seeding with 35 lbs./acre of fescue. No houses occur on the site. The site was treated with Clopyralid in 2011 and 2012. This site has a medium density population and Clopyralid and Glyphosate is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a high risk of erosion potential at the site and an erosion plan will be used.

Orange-3: The proposed treatment site contains 1.55 acres. The site is composed of Maple, Flowering Dogwood, White Ash, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Wellston-Adyeville-Ebal Silt Loam (WppD2) (12-18% slopes, eroded). These soils consist of moderately well drained to somewhat excessively drained. The potential for surface water runoff ranges from low to rapid. Permeability is moderate. No houses occur on the site. The site was treated in 2012 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate is proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site and the site will be monitored.

Posey-2: The proposed treatment site contains 0.65 acres. The site is composed of Flowering Dogwood, White Ash, Black Cherry, Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A creek occurs within the site. The soil type at the site is Wellston Silt Loam (WeE) (18-25% slopes). The Wellston series of soils is well drained. The potential for surface water runoff is medium to rapid. Permeability is moderate. No houses occur on the site. The site was treated in 2012 with Clopyralid and Glyphosate. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site and the site will be monitored.

Sullivan-1: The proposed treatment site contains 1.25 acres. The site is composed of Hickory, Red Maple, Ash, Red Oak, American Elm, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. A drainage ditch occurs within the site. The soil type at this site is Hickory Silt Loam (HkE) (18-25% slopes). The Hickory series of soils are well drained. The potential for surface water runoff is medium to very high. Permeability is moderate. No houses occur on the site. The site was treated with Clopyralid in 2009 and 2010, and was treated with Clopyralid and Glyphosate in 2011 and 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a moderate risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used.

Sullivan-2: The proposed treatment site contains 4.64 acres. The site is composed of Maple, Black Cherry, American Sycamore, White Willow, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the State Endangered Species *Rana areolata circulosa* (northern crawfish frog) within a half mile of the site. No water sources occur within the site. The soil types at this site are Strip Mines (St) and Iva Silt Loam (IvA) (0-2% slopes). Strip Mines soils consist generally of well drained with moderately slow permeability. The potential in these soils for surface water runoff is very rapid. The Iva series of soils are somewhat poorly drained and permeability is moderate. The potential for surface water runoff is low. No houses occur on the site. Cattle graze within the site. An electric fence is within the site. The site was treated with Clopyralid in 2011 and 2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the

need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Vanderburgh-4: The proposed treatment site contains 3.00 acres. The site is composed of Maple, Oak, Black Walnut, American Sycamore and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A stream and water springs occur within the site. The soil types at this site are Hosmer Silt Loam (HoB2) (2-6% slopes, eroded), Hosmer Silt Loam (HoC2) (6-12% slopes, eroded) and Wellston Silt Loam (WeE2) (18-25% slopes, eroded). These soils consist of moderately well drained to well drained. The potential for surface water runoff is medium to very high. Permeability is moderate. Houses and businesses occur adjacent to the site. The site has had no prior treatment. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Vigo-2: The proposed treatment site contains 1.00 acre. The site is composed of Maple, Ash, American Sycamore, Sassafrass, American Elm, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Parke Silt Loam (PaB2) (2-6% slopes, eroded) and Alford Silt Loam (AlD3) (12-18% slopes, severely eroded). These series of soils consist ofwell drained soils and the potential for surface water runoff is low to very high. Permeability is moderate. No houses occur on the site. The site was treated with Clopyralid in 2008-2010, and was treated with Clopyralid and Glyphosate in 2011 and 2012. This site has a medium density population and Clopyralid, Glyphosate and Metsulfuron are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Warrick-1: The proposed treatment site contains 1.67 acres. The site is composed of Maple, Black Cherry, American Elm, Euonymus, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Wheeling Silt Loam (WhB2) (2-6% slopes, eroded) and Weinbach Silt Loam (WbA) (0-2 % slopes). The Wheeling series of soils are well drained and the Weinbach series of soils are somewhat poorly drained. The potential for surface water runoff in Wheeling soils is low to medium and slow in Weinbach soils. Permeability in Wheeling soils is moderate and very slow in Weinbach soils. Houses occur adjacent to the site. The site was treated with Clopyralid in 2009-2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and

may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Warrick-2: The proposed treatment site contains 7.92 acres. The site is composed of Maple, Flowering Dogwood, Black Walnut, Pine, Oak, American Elm, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. Drainage ditches occur within the site. The soil types at this site are Zanesville Silt Loam (ZaD3) (12-18% slopes, severely eroded), Tilsit Silt Loam (TtB2) (2-6% slopes, eroded), Tilsit Silt Loam (TsB2) (2-6% slopes, eroded) and Zanesville Silt Loam (ZaC3) (6-12% slopes, severely eroded). These soils are moderately well drained to well drained. The potential for surface water runoff in Zanesville soils is is medium and negligible to medium in Tilsit soils. Permeability in these soils is moderate above the fragipan and slow in the fragipan. No houses occur on the site. The site is adjacent to Lincoln State Park property. The site was treated with Clopyralid in 2009-2011 and with Clopyralid and Glyphosate in2012. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Thus, there is a low risk of erosion potential at the site.

Washington-3: The proposed treatment site contains 2.60 acres. The site is composed of Oak, Tulip Poplar, American Beech, Hickory, Virginia Pine, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Crider Silt Loam (CoC2) (6-12% slopes, eroded) and Hagerstown-Caneyville Silt Loam (HeD2) (12-18% slopes, eroded). These soils are well drained. The potential for surface water runoff in Crider soils is low to high and medium to very high in Hagerstown-Caneyville soils. Permeability is moderate in Crider soils and slow to moderate in Hagerstown-Caneyville soils. No houses occur on the site. The site was treated with Clopyralid in 2008 to 2011, and was treated with Clopyralid and Glyphosate in 2009, 2010 and 2012. This site has a medium density population and Clopyralid, Glyphosate and Metsulfuron are proposed for 2013. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron will be applied in a selective manner and as a spot treatment. Thus, there is a low risk of erosion potential at the site.

Table 2. Definitions for Descriptions of Proposed Treatment Sites

ENDANGERED SPECIES	The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
FRAGIC SOILS	Fragic soil properties are the essential properties of a fragipan.
FRAGIPAN	Brittle subsurface restricting water flow and root penetration, usually loamy textured and weakly cemented.
INDIANA CLASSIFIED FOREST OR WILDLANDS	A minimum of 10 contiguous acres supporting a growth of native or planted trees, native or planted grasslands, wetlands or other acceptable types of land cover that have been set aside and managed for the production of timber, wildlife habitat and watershed protection.
SPECIES OF SPECIAL CONCERN	A species is considered a species of special concern if, although the species is not endangered or threatened, it is extremely uncommon in its range, or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category along with those species that were once threatened or endangered but now have increasing or protected, stable populations.
SURFACE WATER RUNOFF	The water flow that occurs when the soil is infiltrated to full capacity and excess water from rain, meltwater, or other sources flows over the land. This is a major component of the water cycle, and the primary agent in water erosion
THREATENED SPECIES	A species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, as defined in the Endangered Species Act.

2.0 Licenses and Recordkeeping

The contractor must have employees that have a current Indiana Pesticide Applicator's License in the appropriate category for each site. The contractor's employees will be required to maintain a current license in the following categories in order to conduct treatments at all of the sites: 2-Forestry, 3a-Ornamental, and 6-Right of Way.

A. Applicators and contractor employees must be fully trained and certified according to IC 15-3-3.6. According to IC 15-3-3.6 the contractor must also have a valid form of financial responsibility.
B. The contractor is responsible for obtaining all necessary permits and licenses.
C. The contractor will supply DNR with a copy of all 2013 project treatment records within 14 days of the last project treatment day. Contractor will maintain records of applications and spills for two years from treatment date.

3.0 Safety and Hazard Communication

A. General Safety Requirements

1. In addition to the spray vehicle, one other street legal vehicle must be present at the kudzu site within a distance that is as close as possible to the site. This is to provide quick available transportation in the event of a medical emergency.
2. At least one individual at the site must carry a fully charged cell phone.
3. A DNR employee must be present at the site during all applications on private property.
   The DNR Employee must do the following:
   a) Notify landowner of arrival on property.
   b) Take weather measurements including temperature, RH, wind speed.
   c) Complete the herbicide record application form.
   d) Communicate known site hazards to the contractor.
   e) Facilitate the safe movement of spray equipment during the treatment process.
   f) The DNR Employee has the authority to start, stop or alter the application.
4. Site assessments will be conducted each year by DNR staff, prior to treatments to evaluate sites for possible safety hazards.

B. Herbicides and spray equipment

1. All parts of the spray equipment must be triple rinsed internally before loading the herbicide for the application in order to prevent prior pesticides from contaminating the herbicide being used for that site or the site area environment.
2. Herbicides must be stored in a locked, non-passenger location of the vehicle in original containers with labels.
3. The pesticide will be mixed according to label directions for the control of kudzu.
4. When possible, herbicides should only be mixed at the treatment site immediately prior to beginning application. This is designed to minimize the risk of a high volume, hazardous spill during transportation to the site. The quantity of herbicide mixed should be just sufficient to do the application for each site to minimize excess and the need for disposal**.** Left over small loads of herbicide mix may be moved from site to site.
5. All herbicide disposable gloves, mixing equipment and hand towels must be placed in a plastic trash bag and locked in the herbicide storage area of the vehicle.

6. A fire extinguisher rated for gasoline and chemical fires must be available on the spray equipment and the nearby truck.
7. A portable spill response kit, two shovels and extra PPE (Personal Protective Equipment) must be in the area of the spray equipment during applications in order to provide rapid response to an accidental, large scale spill.
8. The contractor and on site DNR employee shall keep all emergency phone numbers and the number to CHEM TREC readily available during applications.

C. Protective clothing

1. The applicator will provide any protective clothing for employees mixing, loading, or applying herbicides or operating equipment, according to product label requirements. All DNR personnel working at the site must wear long pants due the presence of herbicides and ticks. Short pants are not acceptable.
2. A protective hat must be worn by applicators in order to provide protection from possible run off of herbicide from overhead vines.
3. Foot wear should be some type of hiking boot or work boot with a strong supportive sole. Shoes with ankle support and a rubber sole that wraps around the toe area are preferred. Sneakers are not acceptable.
4. Protective clothing requirements must comply with label directions of each herbicide employed on the project.

D. Signs

1. Any signs required by law to indicate application of the herbicide will be provided by the applicator. Signs must be removed after reentry time is permitted according the herbicide label, but no later than 72 hours after reentry time is up.
2. Although not required by the Worker Protection Standard, signs will be placed at treated kudzu sites near residential areas where post treatment entry could be a potential issue.

E. Notification

1. DNR will notify landowners by telephone at least 48 hours in advance of any herbicide applications on their properties.
2. The applicator/contractor will be informed of such notifications.
3. The DNR representative must have obtained written and/or oral permission from the landowner to treat the sites. All permission records will be maintained by the DNR and will be made available to the contractor upon request.
4. DNR personnel has Right of Entry onto properties for evaluation or treatment of kudzu (IC 14-24-4-1, IC 14-24-5-6, IC 14-24-8-1, 312 IAC 18-2-2.) and will use this authority to escort the contractor onto treatment sites.
5. Treatments will not occur on Saturdays or Sundays.

F. Traffic Control and Working Along Roadsides

1. Fluorescent colored vests must be worn when working along roadsides.
2. Emergency flashers or an orange strobe light on the roof to the vehicle must be used while vehicles are parked in close proximity to the road.
3. Spray equipment and tractors must have a slow moving vehicle placard attached to them (to be provided by applicator).

4. If traffic must be stopped to move spray equipment across or down the road to the kudzu sites, the following must be done:
    - Two people standing in the road with fluorescent vest may be utilized to control traffic on less traveled county roads. Use cell phones with speaker phone on as a two way radio.
    - For heavier traffic situations on State Highways and other busy locations; contact the local sheriff's office or state police to provide assistance with traffic control.
    - If police officials are not available, a minimum of two DNR employees must be present.
    - When stopping traffic, with your vehicle and safety lights on, go to an area in the road in which you can safely see in each direction.
    - A second DNR vehicle should do the same behind the first.
    - Maintain open cell phone communications with the second vehicle via speaker phone while doing this activity.
    - The spray equipment should move safely in between the two DNR vehicles that have stopped traffic.
    - Once the spray equipment has cleared the road, pull your state vehicle off of the road and allow traffic to flow.

G. Working or Crossing Railroad Tracks

1. All federal railroad laws apply when working on railroad property.
2. It is illegal to cross or work within 20 feet of an operating railroad track.
3. A railroad flagman must be on site to monitor train activity and legally open access to the tracks for work that involves crossing or operating within 20 feet of railroad tracks. **This is Federal Law.**
4. The railroad flagman has full authority over the starting and stopping of the work and can decide when crews must be pulled off of the tracks.
5. Fluorescent colored vests must be worn when working on and around railroad tracks.
6. The DNR employee on site must maintain open communication with the railroad flagmen and must provide assistance in informing the spray crew when to clear the railroad tracks as order by railroad personnel.
7. The onsite DNR employee must maintain open communication with railroad personnel about the progress of the work and expected completion time.

H. Adverse Weather Conditions

1. Spraying activity will be halted if winds exceed 15 mph at the treatment site or excessive drift is observed by any individual working at the treatment site.Although drift sometime occurs inside the working area of kudzu sites, it is absolutely essential that drift does not occur beyond the treatment site while spraying next to crop fields, especially soybeans.
2. Treatments will not be conducted if daytime temperatures are below 60F in order to maintain the effectiveness of the herbicides. Herbicide applications will not be conducted if leaf wetness from dew or previous rainfall exists on the kudzu leaf surface.
3. Herbicide applications will not be conducted if rain is expected within 4 hours after applications have been completed.

4. Excessively high temperatures and hot working conditions are frequently encountered during this project
    a) Bring plenty of fluids to drink while at treatment sites
    b) Bring your lunch along to sites because sites are often far from fast food and restaurant locations.
    c) Wear a hat to protect yourself from the hot sun/sunscreen
    d) The spray crews are likely to experience more difficult working conditions than the DNR personnel at the site. If excessive heat becomes a safety issue, work can stop at the discretion of the spray crew.

I. Use of Cutting Tools

1. Cuttings tools used at the site include power tools such as chain saws, brush cutter, and hand tools such as machetes, hand saws and looping shears.
2. On site DNR personnel are not to use contractor's power tools, including chain saws and brush cutters unless there is an emergency situation in which use would prevent injury or save lives.
3. Personal protective equipment including, saw chaps, face shield (eye protection), hard hat and ear protection must be worn when operating power cutting tools.
4. Care must be taken when caring cutting tools through rough terrain. In some cases it is better to set the cutting down if it is not needed in a rough area. A trip and fall with a cutting tool could result in serious injury.
5. A first aid kit should be on site for minor cuts
6. If serious injury that results in excessive bleeding occurs,
    - Stop or slow the bleeding by applying pressure.
    - Contact emergency personnel.
    - If unable to contact emergency personnel, get individual inside of vehicle and transport to nearest hospital while contacting emergency personnel
    - Provide emergency personnel with nature of injury, age of person, gender, and any medications they may be taking or are allergic too.

J. Fuels and Fueling

1. All transported fuels must be stored in a properly labeled, vapor proof container, in a non passenger area of the vehicle away from the pesticides or fertilizers.
2. Place portable fuel containers on the ground when filling at a gas station. **Do not fill portable fuel tanks while in the back of vehicles because the static charge build up from the moving vehicle may result in a spark when the nozzle is placed in the container, resulting in a fire.**
3. Do not fuel vehicles or any type of equipment that is running. Turn off all equipment and vehicles during fueling.

K. Trailers and Towing

1. All trailers must be maintained in safe working condition by the contractor.
2. Inspection of the ball hitch, safety chains, emergency brake cable, ramps, and operating lights must be completed on a regular basis and should be checked prior to traveling to each site

3. Trailers must not be over loaded and careful attention must be taken not to exceed weight ratings on towing capacity of the vehicle, hitch or trailer.

4.0 Accidental Spill

A. The contractor will provide a spill plan for the loading, mixing and application of the treatment material. This plan will be followed in case of an accidental spill. **(SEE: HERBICIDE SPILL RESPONSE PLAN, PAGE 33-34)**
B. The contractor employees are responsible for containing and cleaning up any chemical spill.
C. The contractor employees are responsible for completing the spill report form.
D. All spills, regardless of size will be **recorded on the spill report form.** This is includes minor spills during mixing and loading, drips from nozzles, minor leaks on spray equipment, leaks and spills associated with pesticide containers. **(SEE: SPILL REPORT FORM, PAGE 35)**
E. Major spills and environmentally significant spills, whether large or small may require additional reporting procedures.
F. Once the spill report form is complete, it will be signed by the applicator that cleaned it up and the DNR person on site during the event. DNR will keep the original copy of this completed form and the applicator will also maintain a copy of this record at their place of business for 2 years.

In the event a major or environmentally significant spill does occur the following will be notified: (SEE: PESTICIDE SPILL CALLING SHEET, PAGE 32)

- Safety Officer of the DNR: (Richard Edwards) 317-232-4145
- State Chemist Office: 765-494-1492
- State Police: 911 or site specific emergency numbers
- IN Dept. of Environmental Management Spill Line: 888-233-7745
- Local authorities: police, fire department, hospitals
- CHEMTREC (Chemical Transportation Emergency Center): 800-424-9300
- National Response Center (if spill occurs on a highway): 800-424-8802

5.0 National Pollutant Discharge Elimination System Incident Reporting Requirements

Adverse Incidents to be Reported to the Indiana Dept. of Environmental Management (IDEM)

All persons covered by the Indiana General Permit for Pesticide Applications (Permit ING870000) must monitor for, identify, and report adverse incidents. If a person covered by this general permit observes or are otherwise made aware of an adverse incident that may have resulted from a discharge from the pesticide application, the person must notify IDEM by telephone at (888) 233-7745.

A. Immediately for incidents which pose a significant danger to human health or the environment,
B. As soon as possible but within two (2) hours of discovery for any adverse incidents resulting in death or acute injury or illness to animals or humans (see 327 IAC 2-6.1), and

C. Within 24 hours of the person becoming aware of the adverse incident for any other adverse incidents not listed above.

Such adverse incident reports to IDEM must include the following information:

- The caller's name and telephone number;
- Operator name and mailing address;
- If covered under a notice of intent, the NPDES tracking number;
- The name and telephone number of a contact person, if different than the person providing the 24-hour notice;
- How and when the person became aware of the adverse incident;
- Description of the location of the adverse incident;
- Description of the adverse incident identified and the EPA pesticide registration number for each product the person applied in the area of the adverse incident; and
- Description of any steps the person has taken or will take to correct, repair, remedy, clean up, or otherwise address any adverse effects.

Written Reports of Adverse Incidents to IDEM

Within 5 days of reporting an adverse incident, the person covered by the pesticide general permit must provide a written report of the adverse incident to the department which includes the following information:

A. Information required to be provided above;
B. Date and time the person notified IDEM of the adverse incident, who the person spoke with, and any instructions the person received from IDEM;
C. Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc);
D. A description of the circumstances of the adverse incident including species affected, estimated number of individual and approximate size of dead or distressed organisms;
E. Magnitude and scope of the affected area (e.g. aquatic square area or total stream distance affected
F. Pesticide application rate, intended use site (e.g., banks, above, or direct to water), method of application, and name of pesticide product, description of pesticide ingredients, and EPA registration number;
G. Description of the habitat and the circumstances under which the adverse incident occurred (including any available ambient water data for pesticides applied:
H. If laboratory tests were performed, indicate what test(s) were performed, and when, and provide a summary of the test results within 5 days after they become available;
I. If applicable, explain why the person believes the adverse incident could not have been caused by exposure to the pesticide;
J. Actions to be taken to prevent recurrence of adverse incidents; and
K. Signed and dated in accordance with 327 IAC 5-2-22.

The person must report adverse incidents even for those instances when the pesticide labeling states that adverse effects may occur.

Adverse Incident Reporting For Federally listed Threatened or Endangered Species

If a person becomes aware of an adverse incident to a federally listed threatened or endangered species or its federally designated critical habitat, that may have resulted from a discharge from the pesticide application, the person must immediately notify the National Marine Fisheries Service Northeast Regional Office (NMFS) at **978-281-9300** in the case of an anadromous or marine species, or the U.S. Fish and Wildlife Service (FWS) Indianapolis Law Enforcement Office at **317-346-7014** in the case of a terrestrial or freshwater species. This notification must be made by telephone immediately upon becoming aware of the adverse incident and must include the following information:

A. The caller's name and telephone number;
B. Operator name and mailing address;
C. The name of the affected species;
D. How and when the person became aware of the adverse incident;
E. Description of the location of the adverse incident;
F. Description of the adverse incident, including the EPA pesticide registration number for each product the person applied in the area of the adverse incident; and
G. Description of any steps the person has taken or will take to alleviate the adverse impact to the species.

Adverse Incident Reporting for State-Listed Rare, Threatened or Endangered Species

If a person becomes aware of an adverse incident to a state-listed rare, threatened or endangered species or its critical habitat that may have resulted from a discharge from the pesticide application, the person must immediately notify the Indiana Department of Natural Resources at **317-232-4200**. This notification must be made by telephone immediately upon becoming aware of the adverse incident and must include the information required in the previous section.

6.0 Safety Training

Safety training will be incorporated into the pre treatment training for treatment site and load site observers and other personnel. The Work and Safety Plan will be reviewed at the time of application. Individuals will review emergency procedures, phone numbers, the communication procedure, the location of emergency equipment, and the monitoring procedure.

7.0 Personal/Vehicular Incident

In the event of a personal or vehicular incident, the treatment site observer or other project personnel will notify the State Police, 911 services if available in the project area, county/municipal police, fire department, hospital and EMS for emergency situations. Project personnel will assist in the emergency situation as needed. A report of the incident should be made using Indiana State Form 40141, "Report of Personal/Vehicular Incident".
DO NOT DELAY NOTIFICATION TO EMERGENCY SERVICES.
(SEE: REPORT OF PERSONAL/VEHICULAR INCIDENT, PAGES 28-29)
(SEE: TORT CLAIM FORM, PAGES 30-31)

REPORT OF PERSONAL / VEHICULAR INCIDENT

State Form 40141 (R2 / 5-90)

INDIANA DEPARTMENT OF NATURAL RESOURCES

■ PRIVACY NOTICE

This agency is requesting that you disclose your Social Security Number. You have the right to refuse, and will not be penalized for doing so.

INSTRUCTIONS: Within ten (10) days, the completed form (State Form 40141) will be distributed to the following:

- *2 copies to the Director of Safety.*
  (The Director of Safety will forward a copy to the Investigation Division, Attorney General.)
- *1 copy to the DNR division representative involved in the accident*
- *1 copy to be retained by the originator.*

TO:
ATTORNEY GENERAL'S OFFICE, INVESTIGATION DIVISION

FROM: *(PROPERTY)*

VIA: *(AGENCY / DIVISION)*

NOTICE

This report is prepared by and for State use. It shall not be published or disseminated to anyone without specific authorization from a representative of the office of the Attorney General of Indiana or a representative of the state agency with the authority to release said information.

TIME, PLACE AND ENVIRONMENT

☐ State Employee ☐ Not a State Employee

Date of Incident *(Month, Day, Year)*

Incident Resulted In: ☐ Personal Injury ☐ Vehicle Damage

Local Time ☐ A.M. ☐ P.M.

Day of Week

Exact Location of Accident

Tort Claim Procedure Issued ☐ Yes ☐ No

WEATHER CONDITIONS:
☐ Clear ☐ Fog, Smoke
☐ Cloudy ☐ Other *(Describe)*
☐ Rain
☐ Snow
☐ Sleet / Hail
☐ Freezing Rain

LIGHT CONDITIONS:
☐ Daylight ☐ Dark *(No Street Lights)*
☐ Dawn / Dusk
☐ Dark *(Street Lights On)*
☐ Dark *(Street Lights Off)*

TYPE OF INCIDENT:
☐ Personal Injury ☐ Property Damage
☐ Fatality ☐ Vehicle Damage

PHOTO INCLUDED: ☐ Yes ☐ No

PROPERTY MAP INCLUDED: ☐ Yes ☐ No

INJURED PERSON

Name of Injured Person | Telephone Number

Address | Date of Birth *(Month, Day, Year)*

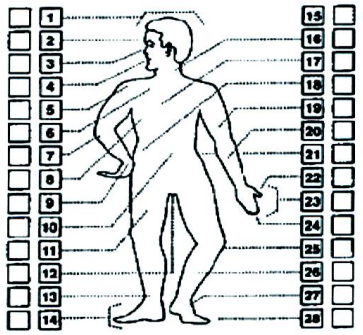
City, State and ZIP code | Social Security Number ■

BODILY INJURY STATUS

Below is a numbered list indicating ***Area of Injury****. In the box next to the numbers around the figure, show the type of injury that occurred; using the letter coding indicated under* ***Type of Injury****. This will give an over-all and precise picture of the nature of the injury.*

Area of Injury

Head..... 1	Shoulder..... 5	Wrist..... 9	Ankle..... 13	Chest..... 17	Back..... 21	Knee..... 25
Face..... 2	Collarbone..... 6	Abdomen..... 10	Foot..... 14	Hip..... 18	Thumb..... 22	Lower leg..... 26
Eye..... 3	Elbow..... 7	Thigh..... 11	Skin..... 15	Upper arm..... 19	Hand..... 23	Instep..... 27
Tooth..... 4	Ribs..... 8	Groin..... 12	Neck..... 16	Forearm..... 20	Finger..... 24	Toe..... 28



Indicate skin areas affected!

Type of Injury

WOUNDS.....	Laceration.....	A	BURN.....	Heat.....	L
	Contusion.....	B		Chemical.....	M
	Infection.....	C		Friction.....	N
	Foreign Body.....	D	SKIN.....	Dermatitis.....	O
	Puncture.....	E		Irritation, Rash...	P
			FRACTURE.....		Q
			STRAIN.....		R
EYES.....	Foreign Body.....	F	SPRAIN.....		S
	Burn, Corrosive...	G	GASES.....	Nausea.....	T
	Burn, Heat.....	H		Dizziness.....	U
	Burn, Flash.....	I		Irritation.....	V
	Wound.....	J	PAINS.....		W
	Irritation.....	K	MISCELLANEOUS.....		X

VICTIM STATUS
☐ Conscious
☐ Semi-conscious
☐ Unconscious
☐ Dead

DISPOSITION
☐ Went Home
☐ Went to Hospital
☐ Saw Physician

Received First Aid
☐ Yes ☐ No
If Yes, By Whom?

☐ Refused Medical Treatment
☐ Ambulance: Name of Ambulance Service

WITNESS

Name | Telephone Number

Address | Social Security Number ■

City, State and ZIP code

(over)

DESCRIPTION OF ACCIDENT

Describe Briefly How the Accident Occurred: **FACTS ONLY.**

LAW ENFORCEMENT

Name of Investigating Officer	Badge / I.D. Number
Department	Law Enforcement Called? ☐Yes ☐No If Yes, By Whom?

OTHER REPORTS

Indiana Operator's Accident Report ☐Yes ☐No	Investigative Officer's Report ☐Yes ☐No

SIGNATURE

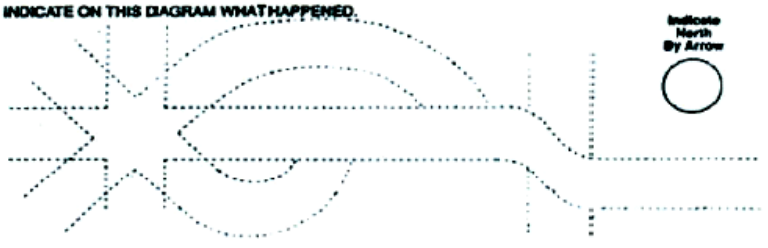
Authorized personnel shall complete and process this report without undue delay.

Report Prepared By:	Title	Date *(Month, Day, Year)*

STATE 1 VEHICLE 1 ☐ DRIVER 1 ☐				OTHER VEHICLE 2 VEHICLE 2 ☐ DRIVER 2 ☐			
Print Driver's Name *(Last, First, MI)*				Print Driver's Name *(Last, First, MI)*			
Address *(Street, City, State, ZIP code)*				Address *(Street, City, State, ZIP code)*			
Sex	Date of Birth *(Month, Day, Year)*		License Type	Sex	Date of Birth *(Month, Day, Year)*		License Type
License State	Driver's License Number		Restrictions	License State	Driver's License Number		Restrictions
Color	Veh.Yr.	Make	Model Name	Color	Veh.Yr.	Make	Model Name
Veh.Type *(Enter No.)*	Lic.Yr.	License Plate No./Comm. No.	Lic.State	Veh.Type *(Enter No.)*	Lic.Yr.	License Plate No./Comm. No.	Lic.State
Posted Speed Limit	Direction of Travel	No. of Occupants		Posted Speed Limit	Direction of Travel	No. of Occupants	
Fire? ☐Yes ☐No	Number of Axles	Towed? ☐Yes ☐No		Fire? ☐Yes ☐No	Number of Axles	Towed? ☐Yes ☐No	
Registered Owner's Name				Registered Owner's Name			
Address *(Street, City, State, ZIP code)*				Address *(Street, City, State, ZIP code)*			

DIAGRAM *(Refer to Vehicles by Number)*

INDICATE ON THIS DIAGRAM WHAT HAPPENED.



INSTRUCTIONS

1. *Follow dotted lines to draw outline of roadway at place of accident.*
2. *Number each vehicle and show direction of travel by arrow.* 1 2
3. *Use solid line to show path before accident.* 1
   dotted line after accident: 1
4. *Show pedestrian by:*
5. *Show railroad by:*
6. *Show distance and direction to landmark; identify landmarks by name or number.*
7. *Show traffic controls.*

How did the accident happen, and in your opinion, what caused the accident? *(Describe fully, using a separate sheet of paper if necessary.)*

Was Accident Job Related? ☐Yes ☐No	Signature of Immediate Supervisor	Date *(Month, Day, Year)*

NOTICE OF TORT CLAIM FOR PROPERTY DAMAGE AND/OR PERSONAL INJURY

State Form 54668 (3-11)
Special Investigations Division

OFFICE OF ATTORNEY GENERAL
ATTN: Tort Claim Investigations
Government Center South, 5th floor
302 W. Washington Street
Indianapolis, IN 46204
Telephone: (317) 232-6350

INSTRUCTIONS: Anyone who has a claim for personal injury or property damage against the State of Indiana must either use this form to file a claim or make the claim in writing as prescribed in Indiana Code 34-13-3. Immunities are listed on the back of this form.

1. ***If applicable***, include copies of accident/incident report, vehicle registration, paid receipts for repair or two (2) estimates for repair, medical reports, photographs and any additional documentation in reference to this matter.
2. Each person who had a loss should file a separate form.
3. Sign and date this form.
4. State statute requires the claim be delivered in person or be sent via ***Certified*** or ***Registered*** mail to the address in the upper right corner above.
5. Do not delay making your claim. Indiana law gives you two hundred seventy (270) days after the loss to make a claim and it must comply with **Indiana Code 34-13-3**.
6. Keep a copy of your claim form, receipts, bills and certified/registered mail receipt.
7. If your claim is properly filed, the Office of the Attorney General will investigate it and will notify you in writing within ninety (90) days of receipt if your claim is approved. A claim is denied if not approved within ninety (90) days.
8. The filing of this claim is part of a legal process. If you have any questions about the right way to file a claim, please contact an attorney of your choice. The state's attorneys are not authorized by law to assist you with filing this claim. For your information a list of actions, or conditions, resulting in non-liability pursuant to Indiana Code 34-13-3 are shown on the back of this form.

CLAIMANT INFORMATION

Name	Home Telephone	Work Telephone	Cellular Telephone

Address at Time of Loss (*number and street, city, state, and ZIP code*)	Email Address	
Current Address (*if different from above*)	Driver License Number	Issuing State
	Vehicle License Plate Number (*if involved*)	Issuing State

LOSS INFORMATION

Date of Loss (*m/d/yy*)	Time of Loss ☐ AM ☐ PM	Dollar Amount of Loss	State Agency Involved	State Vehicle Commission (*if known*)

Exact Location of Loss (*include town, street & nearest crossroad*)	Loss County

Names/Addresses of All Persons Involved (*if known*)

Alleged Negligence

Explanation of what happened (*use additional sheets if necessary*)

Please read: I swear and affirm under the penalties for perjury that the foregoing information is true and correct to the best of my knowledge and belief.

Claimant's Signature *Date (m/d/yy)*

Immunity of governmental entity or employee

A governmental entity or an employee acting within the scope of the employee's employment is not liable if a loss results from the following:

(1) The natural condition of unimproved property.

(2) The condition of a reservoir, dam, canal, conduit, drain, or similar structure when used by a person for a purpose that is not foreseeable.

(3) The temporary condition of a public thoroughfare or extreme sport area that results from weather.

(4) The condition of an unpaved road, trail, or footpath, the purpose of which is to provide access to a recreation or scenic area.

(5) The design, construction, control, operation, or normal condition of an extreme sport area, if all entrances to the extreme sport area are marked with:

(A) a set of rules governing the use of the extreme sport area;

(B) a warning concerning the hazards and dangers associated with the use of the extreme sport area; and

(C) a statement that the extreme sport area may be used only by persons operating extreme sport equipment.

This subdivision shall not be construed to relieve a governmental entity from liability for the continuing duty to maintain extreme sports areas in a reasonably safe condition.

(6) The initiation of a judicial or an administrative proceeding.

(7) The performance of a discretionary function; however, the provision of medical or optical care as provided in IC 34-6-2-38 shall be considered as a ministerial act.

(8) The adoption and enforcement of or failure to adopt or enforce a law (including rules and regulations), unless the act of enforcement constitutes false arrest or false imprisonment.

(9) An act or omission performed in good faith and without malice under the apparent authority of a statute which is invalid if the employee would not have been liable had the statute been valid.

(10) The act or omission of anyone other than the governmental entity or the governmental entity's employee.

(11) The issuance, denial, suspension, or revocation of, or failure or refusal to issue, deny, suspend, or revoke any permit, license, certificate, approval, order, or similar authorization, where the authority is discretionary under the law.

(12) Failure to make an inspection, or making an inadequate or negligent inspection, of any property, other than the property of a governmental entity, to determine whether the property complied with or violates any law or contains a hazard to health or safety.

(13) Entry upon any property where the entry is expressly or impliedly authorized by law.

(14) Misrepresentation if unintentional.

(15) Theft by another person of money in the employee's official custody, unless the loss was sustained because of the employee's own negligent or wrongful act or omission.

(16) Injury to the property of a person under the jurisdiction and control of the department of correction if the person has not exhausted the administrative remedies and procedures provided by section 7 of this chapter.

(17) Injury to the person or property of a person under supervision of a governmental entity and who is:

(A) on probation; or

(B) assigned to an alcohol and drug services program under IC 12-23, a minimum security release program under IC 11-10-8, a pretrial conditional release program under IC 35-33-8, or a community corrections program under IC 11-12.

(18) Design of a highway (as defined in IC 9-13-2-73), toll road project (as defined in IC 8-15-2-4(4)), tollway (as defined in IC 8-15-3-7), or project (as defined in IC 8-15.7-2-14) if the claimed loss occurs at least twenty (20) years after the public highway, toll road project, tollway, or project was designed or substantially redesigned; except that this subdivision shall not be construed to relieve a responsible governmental entity from the continuing duty to provide and maintain public highways in a reasonably safe condition.

(19) Development, adoption, implementation, operation, maintenance, or use of an enhanced emergency communication system.

(20) Injury to a student or a student's property by an employee of a school corporation if the employee is acting reasonably under a discipline policy adopted under IC 20-33-8-12.

(21) An act or omission performed in good faith under the apparent authority of a court order described in IC 35-46-1-15.1 that is invalid, including an arrest or imprisonment related to the enforcement of the court order, if the governmental entity or employee would not have been liable had the court order been valid.

(22) An act taken to investigate or remediate hazardous substances, petroleum, or other pollutants associated with a brownfield (as defined in IC 13-11-2-19.3) unless:

(A) the loss is a result of reckless conduct; or

(B) the governmental entity was responsible for the initial placement of the hazardous substances, petroleum, or other pollutants on the brownfield.

(23) The operation of an off-road vehicle (as defined in IC 14-8-2-185) by a nongovernmental employee, or by a governmental employee not acting within the scope of the employment of the employee, on a public highway in a county road system outside the corporate limits of a city or town, unless the loss is the result of an act or omission amounting to:

(A) gross negligence;

(B) willful or wanton misconduct; or

(C) intentional misconduct.

This subdivision shall not be construed to relieve a governmental entity from liability for the continuing duty to maintain highways in a reasonably safe condition for the operation of motor vehicles licensed by the bureau of motor vehicles for operation on public highways.

PESTICIDE SPILL CALLING SHEET

In the event of a pesticide spill notify the following personnel:

1.	Indiana DNR Safety Officer	**Richard Edwards** **317-232-4145**
2.	Call State Chemist Office	**765-494-1492**
3.	Call State Police	**See Site Specific Emergency Numbers**
4.	Call Department of Environmental Management Spill Line	**888-233-7745**
5.	Notify Local Authorities (Police, Fire, Hospital) if needed	**See Site Specific Emergency Numbers**
6.	Notify CHEMTREC (Chemical Transportation Emergency Center)	**800-424-9300**
7.	Notify National Response Center (If spill occurs on highway)	**800-424-8802**
8.	Notify DNR Program Manager	**Ken Cote** **(812) 322-7249**
	Or	**Phil Marshall** **(812) 595-2740**

Eco Logic LLC
Herbicide Spill Response Plan

All herbicide spray crews will have Personal Protective Equipment (PPE), herbicide absorbent material and tools for containment. A laminated copy of this Spill Response Plan will be kept in each transport and application vehicle.

In the case of an herbicide spill, all employees have been instructed to respond as follows;

-Don't panic
- Supervisor on site leads all spill response activities
- Wear all appropriate PPE per herbicide labels
-Assess the situation
-Account for all employees
-Keep unauthorized persons away from area In the case of large spills.
-Call for assistance if controlling and containing spill is not feasible with available materials and staff on site.

Control the spill at the source

1. Turn off all equipment and nozzles.
2. Prevent further leakage by repositioning the pesticide container
3. Get out Spill Kit and put on any additional disposable PPE needed
4. Prevent the spill from spreading by encircling the area with absorbent material from the spill kit
5. Spill kit should include several different size buckets (3 & 5 gallon) to help control spill either at the source or during cleanup activities. All buckets will be equipped with sealable lids for transport and proper disposal of hazardous material. Label all buckets "hazardous" if used to store or transport herbicide.
6. In case of the 100 gallon tank sprayer having a leak, immediately empty (minimum 225 gallons) water tank and attempt to transfer herbicide from tank sprayer to empty water tank. Label water tank "hazardous" if herbicide is transferred.

Containing the spill:

1. With liquid spills, construct a dam to prevent the chemical from spreading. It is critical not to allow any chemical to get into any body of water, including storm sewers. If needed absorbent dams should be constructed in front of storm sewers or other entry points to any body of water.
2. Use the Spill Kit solidifier in an inward motion onto your spill or use adsorbent pads on top of the spill.
3. Use absorbent socks or granule absorbent to clean up any remaining spilled herbicide

Clean up spilled herbicide

1. Remove solid material with shovel or dustpan and dispose of it in a biohazard bag.
2. Put any additional contaminated pads inside biohazard bag.
3. Place biohazard bags in Spill Kit bucket along with any disposable PPE used, then secure bucket and label "hazardous" on outside of container.

-Report the pesticide spill to Indiana Dept. of Environmental Management 888-233-7745 and the National Response Center 800-424-8802
-Report the spill to client – Indiana DNR Entomology and Plant Pathology
-May need to call the Indiana Dept. of Natural Resources if potential for fish or wildlife exposure 800-847-4367.
-May also call Chemtrec 800-424-9300

-Notify Eco Logic LLC management and make special note if adverse health or environmental effects are noticed or expected

SPILL REPORT FORM

1. Kudzu site name and county _____
2. Name of applicator(s) involved in incident
   _____
3. Applicator(s) title and company name
   _____
4. Application date _____
5. Closet approximate time of incident _____
6. Acreage of site _____
7. Chemical brand name and formulation _____
8. Rate of application _____
9. Total amount of product spilled _____
10. Name of manufacturer _____
11. EPA registration number _____
12. Active ingredient _____
13. Weather conditions _____
14. Description of spill incident (where occurred within site, what happened, how, etc.)
    _____
    _____
    _____
    _____
15. Were there any immediate injuries that occurred to any person as a result of the spill? If so, provide name, title, employer, description of injury. Was medical attention obtained?_____
    _____
    _____
    _____
16. Were any animals directly contacted by the spill chemical at the time of the incident? If so, provide the number and type of animals affected._____
    _____
17. Did any spill material occur into a water site? If so, describe_____
    _____
    _____
    _____
18. Estimated potential for off site movement?_____
    _____
19. Provide name, title, employer of individual who has completed this form._____
    _____
    _____
20. Signature of Applicator_____
21. Signature of DNR Employee Witness_____

Kudzu Site Herbicide Application Record

Site Information

Site Name _____ County_____

Primary Owner_____ Phone _____

Address_____ City_____ ZIP _____

Site Acreage_____ Soil Type_____

Legumes Present YES NO Erosion Potential High Medium Low

Surface Water Close? YES NO Distance to Closest Surface Water _____

Erosion Present Prior to Application YES NO

Treatment/Pesticide Information

Applicator Name, Title, Company_____
_____

Applicator License #_____

Date of Application_____

Time arrived at site _____
Time left/finished at site _____

Weather Conditions Cloudy Sunny

Leaf Wetness Present: Yes No Temperature _____

Wind Speed + Direction_____ Relative Humidity_____

Product_____ EPA Reg #_____
(Name and formulation)

Application Rate _____ Amount of Product Applied_____

Total Acreage Treated_____

Problems encountered during treatment

_____

_____

_____

_____

_____

Actions taken in response to problems

_____

_____

_____

_____

_____

Date and Time Follow Up Visit Occurred_____

Second Application Necessary for this season? YES NO

Signature of Applicator _____

Signature of DNR Representative_____

Dow AgroSciences

Material Safety Data Sheet
Dow AgroSciences LLC

Product Name: TRANSLINE* Herbicide

Issue Date: 10/29/2010
Print Date: 22 Dec 2010

Dow AgroSciences LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
TRANSLINE* Herbicide

COMPANY IDENTIFICATION
Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
USA

Customer Information Number: 800-992-5994
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. Hazards Identification

Emergency Overview
Color: Red to brown
Physical State: Liquid.
Odor: Sweet
Hazards of product:

CAUTION! Combustible liquid and vapor. May cause eye irritation. May cause skin irritation. May cause respiratory tract irritation. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Isolate area. Keep upwind of spill. Stay out of low areas. Eliminate ignition sources. Toxic fumes may be released in fire situations.

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause mild eye discomfort. May cause eye irritation. May cause slight temporary corneal injury. Mist may cause eye irritation. Vapor may cause eye irritation experienced as mild discomfort and redness.
Skin Contact: Prolonged contact may cause slight skin irritation with local redness.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Inhalation: Mist may cause irritation of upper respiratory tract (nose and throat) and lungs. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown
Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Observations in animals include: Lethargy.
Aspiration hazard: Based on available information, aspiration hazard could not be determined.
Effects of Repeated Exposure: For the active ingredient(s): Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death. Based on information for component(s): In animals, effects have been reported on the following organs: Liver. Kidney.
Birth Defects/Developmental Effects: For similar active ingredient(s). Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Based on information for component(s): Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

3. Composition Information

Component	CAS #	Amount
Clopyralid monoethanolamine salt	57754-85-5	40.9 %
Isopropanol	67-63-0	5.0 %
Ethylene oxide, propylene oxide and di-sec-butylphenol polymer	69029-39-6	1.0 %
Balance		53.1 %

4. First-aid measures

Eye Contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.
Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.
Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.
Ingestion: No emergency medical treatment necessary.
Notes to Physician: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank 1998, King et al, 1970). No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data

Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

Medical Conditions Aggravated by Exposure: Repeated excessive exposure may aggravate preexisting lung disease.

Emergency Personnel Protection: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

5. Fire Fighting Measures

Extinguishing Media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. Keep container closed. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Electrically ground and bond all equipment.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Isopropanol	OSHA Table Z-1	PEL	980 mg/m3 400 ppm
	ACGIH	TWA	200 ppm
	ACGIH	STEL	400 ppm
Ethylene oxide, propylene oxide and di-sec-butylphenol polymer	Dow IHG	TWA	2 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin Protection: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Physical State	Liquid.
Color	Red to brown
Odor	Sweet
Flash Point - Closed Cup	47.2 °C (117.0 °F) *Closed Cup*
Flammable Limits In Air	**Lower**: No test data available **Upper**: No test data available
Autoignition Temperature	No test data available
Vapor Pressure	23.5 mmHg @ 20 °C
Boiling Point (760 mmHg)	100 °C (212 °F) .
Vapor Density (air = 1)	1.06 @ 20 °C
Specific Gravity (H2O = 1)	1.161
Liquid Density	1.161 g/cm3 @ 20 °C *Calculated*
Freezing Point	No test data available
Melting Point	Not applicable
Solubility in water (by weight)	Miscible with water
pH	7.5 - 8.0
Decomposition Temperature	No test data available
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Evaporation Rate (Butyl Acetate = 1)	No test data available
Dynamic Viscosity	7 cPs
Kinematic Viscosity	No test data available

10. Stability and Reactivity

Stability/Instability

Unstable at elevated temperatures.

Conditions to Avoid: Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid direct sunlight.

Incompatible Materials: Avoid contact with: Acids. Halogenated organics. Oxidizers. Avoid contact with metals such as: Aluminum. Zinc. Brass. Copper.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Chlorinated pyridine. Hydrogen chloride. Nitrogen oxides.

11. Toxicological Information

Acute Toxicity
Ingestion
As product: LD50, Rat, male and female > 5,000 mg/kg
Dermal
As product: LD50, Rabbit > 5,000 mg/kg
Inhalation
As product: LC50, 4 h, Aerosol, Rat, male and female > 3.0 mg/l
Maximum attainable concentration. No deaths occurred at this concentration.
Eye damage/eye irritation
May cause mild eye discomfort. May cause eye irritation. May cause slight temporary corneal injury. Mist may cause eye irritation. Vapor may cause eye irritation experienced as mild discomfort and redness.
Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness.
Sensitization
Skin
Did not cause allergic skin reactions when tested in guinea pigs.
Respiratory
No relevant information found.
Repeated Dose Toxicity
For the active ingredient(s): Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death. Based on information for component(s): In animals, effects have been reported on the following organs: Liver. Kidney.
Chronic Toxicity and Carcinogenicity
Similar formulations did not cause cancer in laboratory animals.
Developmental Toxicity
For similar active ingredient(s). Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Based on information for component(s): Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.
Reproductive Toxicity
In animal studies, active ingredient did not interfere with reproduction.
Genetic Toxicology
For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

ENVIRONMENTAL FATE
Data for Component: **Clopyralid monoethanolamine salt**

Movement & Partitioning
For similar active ingredient(s). Clopyralid. Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Persistence and Degradability
For similar active ingredient(s). Clopyralid. Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

Data for Component: **Isopropanol**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).
Henry's Law Constant (H): 3.38E-06 - 8.07E-06 atm*m3/mole; 25 °C Estimated.
Partition coefficient, n-octanol/water (log Pow): 0.05 Measured
Partition coefficient, soil organic carbon/water (Koc): 1.1 Estimated.

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
7.26E-12 cm3/s	1.472 d	Estimated.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
95 %	21 d	OECD 301E Test	pass

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
20 - 72 %		78 - 86 %	

Chemical Oxygen Demand: 2.09 mg/mg
Theoretical Oxygen Demand: 2.40 mg/mg

Data for Component: **Ethylene oxide, propylene oxide and di-sec-butylphenol polymer**

Movement & Partitioning

No bioconcentration is expected because of the relatively high water solubility. May foam in water.

Persistence and Degradability

Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).
Chemical Oxygen Demand: 1.78 mg/mg
Theoretical Oxygen Demand: 2.35 mg/mg

ECOTOXICITY

Data for Component: **Clopyralid monoethanolamine salt**

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L). Material is practically non-toxic to aquatic invertebrates on an acute basis (LC50/EC50 > 100 mg/L). Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Fish Acute & Prolonged Toxicity
LC50, bluegill (Lepomis macrochirus), static, 96 h: 125 - 4,686 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, water flea Daphnia magna, static, 48 h, immobilization: 225 - 1,133 mg/l
Aquatic Plant Toxicity
EbC50, green alga Pseudokirchneriella subcapitata (formerly known as Selenastrum capricornutum), static, 96 h: 6.9 mg/l
Toxicity to Above Ground Organisms
oral LD50, mallard (Anas platyrhynchos): 1465 - 2000 mg/kg bodyweight.
dietary LC50, bobwhite (Colinus virginianus): > 5620 mg/kg diet.
contact LD50, Honey bee (Apis mellifera): > 100 micrograms/bee
oral LD50, Honey bee (Apis mellifera): > 100 micrograms/bee

Data for Component: **Isopropanol**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, fathead minnow (Pimephales promelas), flow-through test, 96 h: 9,640 mg/l

Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna, static, 24 h, immobilization: 24 mg/l
Aquatic Plant Toxicity
EC50, alga Scenedesmus sp., Growth rate inhibition, 72 h: > 1,000 mg/l
Toxicity to Micro-organisms
EC50; activated sludge: > 1,000 mg/l

Data for Component: **Ethylene oxide, propylene oxide and di-sec-butylphenol polymer**
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, bluegill (Lepomis macrochirus), static, 96 h: 4.8 mg/l
LC50, rainbow trout (Oncorhynchus mykiss), static, 96 h: 3.7 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna, 48 h: 10.5 mg/l
Toxicity to Above Ground Organisms
dietary LC50, Honey bee (Apis mellifera): > 105 micrograms/bee
contact LD50, Honey bee (Apis mellifera): > 100 micrograms/bee
No Observed Effects Level (NOEL), bobwhite (Colinus virginianus): 2,250 mg/kg
oral LD50, bobwhite (Colinus virginianus): > 2,250 mg/kg

13. Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
Proper Shipping Name: COMBUSTIBLE LIQUID, N.O.S.
Technical Name: CONTAINS ISOPROPANOL
Hazard Class: COMBUSTIBLE LIQUID **ID Number:** NA1993 **Packing Group:** PG III

IMDG
Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.
Technical Name: CONTAINS ISOPROPANOL
Hazard Class: 3 **ID Number:** UN1993 **Packing Group:** PG III
EMS Number: F-E,S-E

ICAO/IATA
Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.
Technical Name: CONTAINS ISOPROPANOL
Hazard Class: 3 **ID Number:** UN1993 **Packing Group:** PG III
Cargo Packing Instruction: 310
Passenger Packing Instruction: 309

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be

obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Isopropanol	67-63-0	5.0%

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Isopropanol	67-63-0	5.0%

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Toxic Substances Control Act (TSCA)
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	2	2	1

Revision

Identification Number: 50397 / 1016 / Issue Date 10/29/2010 / Version: 4.0
DAS Code: XRM-3972
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

Dow AgroSciences LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

MATERIAL SAFETY DATA SHEET

CLOPYRALID 3

Alligare, LLC
Emergency Phone: Chemtrec 800-424-9300
Effective Date: April 02, 2007

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ALLIGARE CLOPYRALID 3
DESCRIPTION: A liquid herbicide.
EPA Reg. No.: 81927-14

COMPANY IDENTIFICATION:
Alligare, LLC
13 North 8th Street
Opelika, AL 36801

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Chemical Name	Formula	CAS #
Clopyralid	(3,6-Dichloro-2-pyridinecarboxylic acid), Monoethanolamine salt	$C_6H_3Cl_2NO_2$	57754-85-5

3. HAZARD IDENTIFICATION

Health Hazards: Harmful if absorbed through skin.

Physical Hazards: May release irritating or toxic fumes if burned.

Environmental Hazards: Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes.

4. FIRST AID

NOTE: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

5. FIRE-FIGHTING MEASURES

Flash point: 47.2°C (117°F)

Flammable Limits (LFL-UFL): Not determined

Fire and Explosion Hazards: May thermally decompose in fire releasing irritating and toxic fumes.

Extinguishing Medium: Alcohol resistant foam, CO2, dry chemical, foam, or water fog preferred.

Fire Fighting Equipment: Firefighters should be equipped with self-contained positive pressure breathing apparatus and turnout gear.

Fire Fighting Instructions: Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

NFPA Ratings: Health – 2 / Flammability – 2 / Reactivity – 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document.

Small Spills: Absorb using sand, vermiculite or other inert absorbent. Place contained material in appropriate container for disposal.

Large Spills: Dike spillage and recover and retain as much free liquid as possible for reuse. Pick up remainder with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. After removal, thoroughly clean contaminated area with water. Collect wash water for approved disposal.

7. HANDLING AND STORAGE

Handling: Do not swallow and avoid contact with eyes, skin and clothing. Use only in a well-ventilated area. Wear appropriate personal protective clothing and equipment (see Section 8 below).

Storage: Keep out of reach of children and animals. Keep in the original container in a cool (above 28°F), dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Pesticide Applicators and Workers: Refer to the product label attached to the product.

Engineering Controls: Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Local mechanical exhaust ventilation may be required. Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Personal Protective Equipment (PPE):

Eyes – Safety goggles or full face respirator if vapors cause eye discomfort.

Clothing – Long-sleeved shirt and long pants. Shoes plus socks.

Gloves – Chemical resistant gloves such as barrier laminate, butyl, nitrile or neoprene rubber, polyvinyl chloride (PVC) or viton.

Respirator – When handling in enclosed areas or areas with limited ventilation, use a respirator with either an organic vapor cartridge with a pre-filter approved for pesticides (MSHA/NIOSH TC-23C) or a canister approved for pesticides (MSH/NIOSH TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this products concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned

General Safety and Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use; replace if necessary (e.g. pinhole leaks). Remove PPE immediately after handling this product; wash the outside of gloves before removing.

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. As soon as possible, wash thoroughly and change into clean clothing. Keep away from food, drink and animal feed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Reddish-brown Liquid
Odor: Sweet
pH: 7.5 – 8.0
Specific Gravity: 1.161 @ 20°C
Vapor Pressure: 23.5mmHg @ 20°C
Solubility: Miscible

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and storage conditions. May decompose if heated.

CONDITIONS TO AVOID: Direct sunlight, open flame and temperatures close to the flash point (117°F).

SUBSTANCES TO AVOID: Acids, oxidizing materials, halogenated organics, brass, copper, zinc and aluminium.

HAZARDOUS REACTIONS: This product is chemically stable and no hazardous reactions should occur if stored and handled as prescribed / indicated.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: Does not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY
LD_{50} (rat): > 5,000 mg/kg)

ACUTE DERMAL TOXICITY
LD_{50} (rat): > 2,000 mg/kg

ACUTE INHALATION TOXICITY
LC_{50} (rat): > 2.1 mg/L

EYE IRRITATION: Moderate

SKIN IRRITATION: Slight

SKIN SENSITIZATION: Not a skin sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

CARCINOGENICITY:

ACGIH:	Not Listed
IARC:	Not Listed
NTP:	Not Listed
OSHA:	Not Listed

MUTAGENIC TOXICITY: Little evidence of mutagenic effects during *in vivo* and *in vitro* assays.

REPRODUCTIVE TOXICITY: No evidence in animal studies.

12. ECOLOGICAL INFORMATION

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes.

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils that would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Plastic – Do not reuse container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning (non-metal containers only).

14. TRANSPORT INFORMATION

CONTAINERS NOT Shipped by Air: Not Regulated by DOT

CONTAINERS Shipped by Air:
DOT PROPER SHIPPING NAME: NA1993, COMPOUNDS, WEED KILLING, LIQUID, 3, PG III
DOT HAZARD CLASS OR DIVISION: 3
DOT UN/NA NUMBER: 1993
DOT PACKING GROUP: III
REPORTABLE QUANTITY: N/A
DOT EMERGENCY RESPONSE GUIDE: 128
MARINE POLLUTANT: No

15. REGULATORY INFORMATION

FIFRA –
All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

OSHA HAZARD COMMUNICATION STANDARD STATUS
Hazardous Chemical

SARA Title III – Section 302 Extremely Hazardous Substances
Not listed

SARA Title III – Section 311/312 Hazard Categories
Immediate, Delayed

SARA Title III – Section 312 Threshold Planning Quantity
The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

SARA Title III – Section 313 Reportable Ingredients
None

CERCLA –
Not Listed

California Prop 65 Status –
Not Listed

16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

DISCLAIMER:

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Nufarm

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300.
For Medical Emergencies Only, Call 1-877-325-1840.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: AquaNeat® Aquatic Herbicide
Synonyms: Isopropylamine Salt of Glyphosate; Glyphosate IPA Salt
EPA Reg. No.: 228-365

Company Name: Nufarm Americas Inc.
150 Harvester Drive, Suite 200
Burr Ridge, IL 60527

Date of Issue: April 5, 2007 **Supersedes:** March 29, 2005
Sections Revised: New or updated information all sections

2. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance and Odor: Colorless viscous solution with little odor.
Warning Statements: Keep out of reach of children. CAUTION. Harmful if inhaled. Avoid breathing spray mist.

Potential Health Effects:
Likely Routes of Exposure: Skin contact and inhalation.
Eye Contact: Slightly irritating based on toxicity studies.
Skin Contact: Slightly toxic and slightly irritating based on toxicity studies.
Ingestion: Slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed.
Inhalation: Low inhalation toxicity.
Medical Conditions Aggravated by Exposure: None known

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:
Available data on similar formulations suggest that this product would be slightly to moderately toxic to aquatic organisms and practically non-toxic to avian species, honeybees and earthworms.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	38641-94-0	53.8
Other Ingredients		46.2

4. FIRST AID MEASURES

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
If on Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable due to aqueous formulation
Autoignition Temperature: Not determined **Flammability Limits:** Not determined

Extinguishing Media: In case of fire, use water (flood with water), dry chemical, CO_2, or alcohol foam.
Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: Containers will burst from internal pressure under extreme fire conditions. If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.
Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon, nitrogen, and phosphorous.

National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 1 **Flammability:** 1 **Reactivity:** 0
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.
Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.
Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Thoroughly scrub floor or other impervious surface with a strong industrial detergent and rinse with water. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.
Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:
Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse. Wash thoroughly with soap and water after handling.

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Storage:
STORE ABOVE 10ºF (-12ºC) TO KEEP PRODUCT FROM CRYSTALLIZING. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68ºF (20ºC) for several days to redissolve and shake, roll or agitate to mix well before using. Do not contaminate water, foodstuff, feed or seed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:
Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:
Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

	OSHA		ACGIH		
Component	TWA	STEL	TWA	STEL	Unit
Isopropylamine Salt of Glyphosate	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colorless viscous solution with little odor.

Boiling Point:	Not determined	**Solubility in Water:**	Miscible
Density:	10.00 pounds/gallon	**Specific Gravity:**	1.201 @ 20ºC
Evaporation Rate:	Not determined	**Vapor Density:**	Not determined
Freezing Point:	10ºF (-12ºC)	**Vapor Pressure:**	Not determined
pH:	5.0 - 5 .4	**Viscosity:**	67.9 cPs @ 20°C

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions.
Conditions to Avoid: Excessive heat. Do not store near heat or flame.
Incompatible Materials: Strong oxidizing agents: bases and acids. This product reacts with galvanized steel or unlined steel (except stainless steel) to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.
Hazardous Decomposition Products: Under fire conditions may produce gases such as oxides of carbon, nitrogen, and phosphorous.
Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:
Data from laboratory studies conducted on a similar, but not identical, formulation:
Oral: Rat LD_{50}: >5,000 mg/kg
Dermal: Rabbit LD_{50}: >5,000 mg/kg
Inhalation: Rat 4-hr LC_{50}: >4.24 mg/l
Eye Irritation: Rabbit: Minimally irritating
Skin Irritation: Rabbit: Non-irritating
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to glyphosate may decrease body weight gains and effects to liver.
Carcinogenicity / Chronic Health Effects: Prolonged overexposure to glyphosate may cause effects to the liver. There was no evidence of carcinogenicity in animal studies using glyphosate. EPA has given glyphosate a Group E classification (evidence of non-carcinogenicity in humans).
Reproductive Toxicity: In laboratory animal studies with glyphosate, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Developmental Toxicity: In animal studies, glyphosate did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.
Genotoxicity: Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Data on Glyphosate technical:

96-hour LC_{50} Bluegill:	120 mg/l	Bobwhite Quail 8-day Dietary LC_{50}:	>4,500 ppm
96-hour LC_{50} Rainbow Trout:	86 mg/l	Mallard Duck 8-day Dietary LC_{50}:	>4,500 ppm
48-hour LC_{50} Daphnia:	780 mg/l		

Environmental Fate:
In the environment, salts of glyphosate rapidly dissociate to glyphosate, which adsorbs strongly to soil and is expected to be immobile in soil. Glyphosate is readily degraded by soil microbes to AMPA (aminomethyl phosphonic acid) that is further degraded to carbon dioxide. Glyphosate and AMPA are unlikely to enter ground water due to their strong adsorptive characteristics. Terrestrially-applied glyphosate has the potential to move into surface waters through soil erosion because it may be adsorbed to soil particles suspended in the runoff. Aquatic applications registered for certain formulations may also result in glyphosate entering surface waters. Complete degradation is slow, but dissipation in

water is rapid because glyphosate is bound in sediments and has low biological availability to aquatic organisms. These characteristics suggest a low potential for bioconcentration in aquatic organisms and this has been verified by laboratory investigations of glyphosate bioconcentration in numerous marine and freshwater organisms with and without soil. The maximum whole body bioconcentration factors for fish were observed to be less than 1X. Bioconcentration factors for sediment dwelling mollusks and crayfish tended to be slightly higher, but were always less than 10X. In addition, any residues accumulated in organisms were rapidly eliminated.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures. Emptied container retains vapor and product residue. Observe all label safeguards until container is destroyed.

Container Handling and Disposal:
Plastic Bottles and Non-Returnable Plastic Drums: Do not reuse container. Triple rinse container. Then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Returnable/Refillable Containers: Close all openings which have been opened during use and replace all caps. Contact Nufarm Customer Service at 1-800-345-3330, to arrange for return of the empty refillable container.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT
Non Regulated – See 49 CFR 173.132(b)(3)

IMDG
Non Regulated – See IMDG 2.6.2.1.3

IATA
Non Regulated – See IATA 3.6.1.5.3

15. REGULATORY INFORMATION

U.S. Federal Regulations:

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Immediate

Section 313 Toxic Chemical(s): None

Reportable Quantity (RQ) under U.S. CERCLA: None

RCRA Waste Code: None

State Information:
Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not listed

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

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Material Safety Data Sheet

DuPont™ Escort® XP Herbicide

Version 2.0

Revision Date 01/22/2010 Ref. 130000036195

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DuPont™ Escort® XP Herbicide
Tradename/Synonym	:	DPX-T6376 60 XP Metsulfuron Methyl 60 XP Escort 60 DF B11495142 METSULFURON METHYL (Methyl 2-[[[[(4-methoxy-6-methyl-1,3,-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate)
MSDS Number	:	130000036195
Manufacturer	:	DuPont 1007 Market Street Wilmington, DE 19898
Product Information	:	1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

CAUTION!

Causes eye irritation. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid breathing vapours or mist.

Potential Health Effects

This section includes potential acute adverse effects which could occur if this material is not used according to the label.

Skin	:	May cause: Irritation with discomfort or pain, redness or rash, itching or swelling.
Eyes	:	May cause: Irritation with discomfort, pain, redness, or visual impairment.

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Metsulfuron methyl	74223-64-6	60 %
Other Ingredients		40 %

Print Date: 1 - 25 - 2010

SECTION 4. FIRST AID MEASURES

Skin contact	:	Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye contact	:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Inhalation	:	No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
Ingestion	:	No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
General advice	:	Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call toll free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties Flash point	:	not applicable
Suitable extinguishing media	:	Water spray, Dry chemical, Foam, Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet, (contamination risk)
Firefighting Instructions	:	In the event of fire, wear self-contained breathing apparatus. Wear full protective equipment. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Wear personal protective equipment. Refer to protective measures listed in sections 7 and 8.
Spill Cleanup	:	Clean-up methods - small spillage Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean-up methods - large spillage Prevent further leakage or spillage. Use approved industrial vacuum cleaner for removal. Shovel into suitable container for disposal. If spill area is on

ground near valuable plants or trees, remove 5 cm of top soil after initial clean-up.

Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas. Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Handling (Physical Aspects) : Dust may form explosive mixture in air. Keep away from heat and sources of ignition.

Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store product in original container only, away from other pesticides, fertilizer, food or feed. Keep containers tightly closed in a cool, well-ventilated place. Keep out of the reach of children.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Skin and body protection : Applicators and other handlers must wear:
Long sleeved shirt and long pants
Shoes plus socks
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
Coveralls
Shoes plus socks

Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines

Exposure Limit Values

Metsulfuron methyl

AEL *	(DUPONT)	10 mg/m3	8 & 12 hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Form	:	solid, granular
Color	:	light brown
Odor	:	odourless
Specific Gravity	:	1.47 at 25 °C (77 °F)
Bulk density	:	0.64 - 0.74 g/ml Tapped
Water solubility	:	dispersible

SECTION 10. STABILITY AND REACTIVITY

Stability	:	Stable at normal temperatures and storage conditions.
Conditions to avoid	:	None reasonably foreseeable.
Incompatibility	:	No materials to be especially mentioned.

SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ Escort® XP Herbicide

Dermal LD50	:	> 2,000 mg/kg , rabbit
Oral LD50	:	> 5,000 mg/kg , rat
Skin irritation	:	Species: rabbit, No skin irritation
Eye irritation	:	Species: rabbit, slight irritation
Sensitisation	:	Species: guinea pig, Animal test did not cause sensitization by skin contact.

Metsulfuron methyl

Inhalation 4 h LC50	:	> 5.3 mg/l, rat
Repeated dose toxicity	:	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions. Oral, rat Reduced body weight gain, Organ weight changes, Liver Dermal, rabbit Skin irritation
Carcinogenicity	:	Did not show carcinogenic effects in animal experiments.
Mutagenicity	:	Did not show mutagenic effects in animal experiments. Did not cause genetic damage in cultured bacterial cells. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.

Reproductive toxicity	:	Animal testing did not show any effects on fertility.
Teratogenicity	:	Animal testing showed no developmental toxicity.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity
Metsulfuron methyl

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 150 mg/l
96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) > 150 mg/l

Toxicity to other organisms
Metsulfuron methyl

LD50	:	Anas platyrhynchos (Mallard duck) > 2,510 mg/kg
LC50	:	Colinus virginianus (Bobwhite quail) > 5,620 mg/kg
Additional ecological information	:	Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal	:	Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.
Container Disposal	:	Refer to the product label for instructions.

SECTION 14. TRANSPORT INFORMATION

IMDG	UN-Number	: 3077
	Proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (Metsulfuron methyl)
	Class	: 9
	Packaging group	: III
	Labelling No.	: 9

Marine pollutant
Not regulated as a hazardous material by DOT.
Not regulated as a hazardous material by IATA.
Optional classification as per IATA Special Provision A97.

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SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	:	SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
EPA Reg. No.	:	352-439 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SECTION 16. OTHER INFORMATION

		NFPA	HMIS
Health	:	1	1
Flammability	:	1	1
Reactivity/Physical hazard	:	0	0

MSDS preparation date : 01/22/2010

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Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

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